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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,995	12/20/2005	Sigurd Buchholz	CH8368/LeA 35,790	9453
7590 03/10/2009 Law and Intellectual Property Department Lanxess Corporation 111 RIDC Park West Drive Pittsburgh, PA 15275-1112			EXAMINER KOSACK, JOSEPH R	
			ART UNIT	PAPER NUMBER
			1626	
			MAIL DATE	DELIVERY MODE
			03/10/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/538,995

**Applicant(s)**

BUCHHOLZ ET AL.

**Examiner**

Joseph R. Kosack

**Art Unit**

1626

**Period for Reply** -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

### **DETAILED ACTION**

Claims 1-10 and 12 are pending in the instant application file.

#### ***Amendments***

The amendment filed on December 19, 2008 has been acknowledged and has been entered into the application file.

#### ***Previous Claim Rejections - 35 USC § 103***

Claims 1-10 and 12 were previously rejected under 35 U.S.C. 103(a) as being unpatentable over Rauchschalbe et al. (US PGPUB 2001/0034453) in view of Merz et al. (*Journal fur praktische Chemie*, 1996, 672-674).

Applicant has traversed the rejection on the grounds that the '453 application does not disclose discharging the product from the reaction zone in the gaseous form or reacting the starting material as a solid in the absence of solvents and that the '453 application teaches away from the combination with Merz et al.

The Examiner respectfully disagrees. Firstly, Rauchschalbe et al. do in fact teach discharging the product in the gaseous form by the distillation. Rauchschalbe et al. specifically state that the product was "distilled off" in Example 4 cited by the Examiner. This means that the product was the one distilled. The Applicant is correct that Rauchschalbe et al. do not teach the reaction using the starting material as a solid in the absence of solvents. That is where the teachings on Merz et al. come in to supplement Rauchschalbe et al. Rauchschalbe et al. teach in paragraph 5 on page 1 about the process of Merz et al., but contrary to the Applicant's belief, does not teach away from combination with the process of Merz et al. with respect to the instant claims.

Merz et al. teach the decarboxylation starting with a solid starting material and then proceeding through a thermal decarboxylation step and eventual distillation. Both Rauchschalbe et al. and Merz et al. teach that the final product can be distilled from the other components. One of skill in the art of continuous processes would understand that the distillation step could be accomplished immediately after the reaction, especially since that is what is done in Rauchschalbe et al.

The Applicant contends that the only way the Office could construct the *prima facie* case of obviousness is through hindsight reconstruction from looking at the instant disclosure. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). The details have been shown to come from the prior art of record and not from the Applicant's disclosure.

Therefore, Applicant's arguments have been considered, but were not found to be persuasive. The rejection is maintained.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Rauchschalbe et al. (US PG PUB 2001/0034453) in view of Merz et al. (*Journal für praktische Chemie*, 1996, 672-674).

The instant application is drawn to a process for decarboxylating 3,4-ethylenedioxythiophene-2,5-dicarboxylic acid thermally with the aid of copper carbonate

as a catalyst. The process forgoes any solvent and is set up to proceed in a continuous process.

Determination of the scope and content of the prior art (MPEP §2141.01)

Rauchschwalbe et al. teach a process for decarboxylating 3,4-dimethoxy-2,5-dicarboxylic acid thiophene by heating around 140° C in a sulfolane solvent in the presence of copper carbonate. See Example 4, page 3, paragraphs 47 and 48.

Ascertainment of the difference between the prior art and the claims (MPEP §2141.02)

Rauchschwalbe et al. do not teach the process without a solvent, the 3,4-ethylenedioxy instead of the 3,4-dimethoxy thiophene, and the details of the continuous process.

Finding of prima facie obviousness—rational and motivation (MPEP §2142-2413)

Merz et al. teach the process for decarboxylating without the use of a solvent. See page 673, column 2. Additionally, 3,4-dimethoxythiophene and 3,4-ethylenedioxythiophene would be obvious variants for the decarboxylation reaction because they are not modified in the reaction and therefore do not play a role in the reaction. A reaction that would work for one would be expected to work for the other. Finally, the courts have consistently ruled that the use of a continuous method vs. a batch process is nonobvious. See In re Giolito, 188 USPQ 645. Therefore, the exact details of the mechanics to carry out the continuous version of a batch process would be obvious to those of skill in the art of industrial scale processes with a reasonable expectation of success. The motivation to combine the references is that performing a

reaction without a solvent is cost-effective and leads to a less toxic or more green process.

Thus, the claimed invention as a whole was *prima facie* obviousness over the combined teachings of the prior art.

### ***Conclusion***

Claims 1-10 and 12 are rejected.

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph R. Kosack whose telephone number is (571)272-5575. The examiner can normally be reached on M-Th 6:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph McKane can be reached on (571)-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph R Kosack/  
Examiner, Art Unit 1626

/REI-TSANG SHIAO /  
Primary Examiner, Art Unit 1626